

Notice of Allowability

Application No.

10/714,526

Examiner

Etsub D. Berhanu

Applicant(s)

KIANI ET AL.

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 21 June 2006.
2. ☒ The allowed claim(s) is/are 3-5,7,9,13,15,17-19 and 24-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 06/12/2006
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jarom D. Kesler on June 21, 2006, wherein amending typographical and grammatical errors in claims 7, 15 and 24 were discussed. Examiner notes that amending "said" to read -- a -- in claim 7 provides proper antecedent basis for the limitations set forth in the claim.

The application has been amended as follows:

Claim 7 has been amended to read:

7. A monitor comprising:

a primary input from which a spectral characteristic of a tissue site is derivable;

a secondary input from which at least one parameter is determinable wherein said spectral characteristic has a dependence on said parameter; and

a processor configured to output [said] a compensated physiological measurement in response to a primary input and said secondary input utilizing a relationship between said spectral characteristic and said at least one parameter and said compensated physiological measurement;

wherein said compensation relationship comprises:

calibration data relating said spectral characteristic to an uncompensated physiological measurement;

a look-up table having at least said spectral characteristic and said at least one parameter as an input and providing said [un]compensated measurement as an output according to said calibration data; and

wherein said at least one parameter is a carboxyhemoglobin concentration and said look up table distinguishes carboxyhemoglobin from oxyhemoglobin.

Claim 9 has been amended to read:

9. A monitor comprising:

a primary input from which a spectral characteristic of a tissue site is derivable;

a secondary input from which at least one parameter is determinable wherein said spectral characteristic has a dependence on said parameter; and

a processor configured to output a compensated physiological measurement in response to said primary input and said secondary input utilizing a relationship between said spectral characteristic and said at least one parameter and said compensated physiological measurement;

wherein said compensation relationship comprises:

calibration data representing a plurality of wavelength-dependent compensation calibration curves, each of said compensation calibration curves relating said spectral characteristic to said compensated physiological measurement;

a look-up table having said spectral characteristic as an input and providing as an output said compensated physiological measurement according to said compensation calibration curves; and

a wavelength determination in response to said at least one parameter so as to select a sensor wavelength and a corresponding one of said compensation calibration curves.

Claim 15 has been amended to read:

15. A monitoring method comprising the steps of:
- inputting a sensor signal responsive to a spectral characteristic of a tissue site;
 - deriving a physiological measurement from said characteristic;
 - obtaining a parameter, wherein said physiological measurement has a dependency on said parameter;
 - determining a relationship between said spectral characteristic and said parameter that accounts for said dependency;
 - compensating said physiological measurement for said parameter utilizing said relationship; and
 - displaying said physiological measurement;
- wherein said compensating step comprises the substeps of:
- storing baseline calibration data;
 - looking-up said compensated physiological measurement from said calibration data according to said spectral characteristic [in] and said parameter; and
- wherein said parameter is a hemoglobin constituent measurement and said looking-up comprises the substeps of:
- distinguishing said hemoglobin constituent from oxyhemoglobin and reduced hemoglobin; and
 - providing an adjusted oxygen saturation measurement according to said distinguishing substep.

Claim 24 has been amended to read:

24. A monitor comprising:
- a primary input means for determining a [special] spectral characteristic associated with a tissue site;

a secondary input means for determining a parameter that is relevant to measuring oxygen saturation at said tissue site; and

a compensation relationship means for relating said spectral characteristic, said parameter and an oxygen saturation measurement;

wherein said compensation relationship comprises a means for modifying a sensor wavelength and for selecting corresponding wavelength dependent calibration data.

2. The following is an examiner's statement of reasons for allowance: Jarman'979 (US Patent No. 5,842,979) discloses a method and apparatus for correcting oxyhemoglobin measurements by also measuring deoxyhemoglobin, carboxyhemoglobin and methemoglobin, and adjusting the measurements to ensure that all of the saturation values add up to 100%. Jarman'979 does not disclose an apparatus having a secondary input from which at least one parameter is determinable wherein a spectral characteristic has a dependence on the parameter, as stated in amended claim 9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etsub D. Berhanu whose telephone number is 571.272.6563. The examiner can normally be reached on Monday - Friday (Every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EDB

ERIC F. WINAKUR
PRIMARY EXAMINER

